

REMARKS

The present Amendment amends claims 1-5, 8-10, 15-17, 19 and 21, leaves claims 4-7, 9, 11-18 and 20 unchanged and cancels claim 22.

Therefore, the present application has pending claims 1-21.

Claims 1 and 8 stand objected to due to informalities noted by the Examiner in paragraphs 2 and 3 of the present application. Amendments were made to claims 1 and 8 to correct the informalities noted by the Examiner. Therefore, this objection is overcome and should be withdrawn.

Claim 2 stand rejected under 35 USC §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as their invention. Various amendments were made throughout claim 2 to bring it into conformity with the requirements of 35 USC §112, second paragraph. Therefore, Applicants submit that this rejection is overcome and should be withdrawn.

Claims 1-4, 10-13, 19 and 21 stand rejected under 35 USC §102(e) as being anticipated by Cannon (U.S. Patent No. 6,886,019); claims 5-8 and 14-17 stand rejected under 35 USC §103(a) as being unpatentable over Cannon in view of Schneider (U.S. Patent No. 6,944,658); claim 9 stands rejected under 35 USC §103(a) as being unpatentable over Cannon in view of Larson (U.S. Patent No. 6,556,904); and claims 20 and 22 stand rejected under 35 USC §103(a) as being unpatentable over Cannon in view of Nakos (U.S. Patent Application Publication No. 2002/0049744). As indicated above, claim 22 was canceled. Therefore, the above described rejection of claim 22 under 35 USC §103(a) as being unpatentable over Cannon in view of Nakos is

rendered moot. Accordingly, reconsideration and withdrawal of this rejection with respect to claim 22 is respectfully requested.

The above described rejections with respect to the remaining claims 1-21 are traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1-21 are not taught or suggested by Cannon, Schneider, Larson and Nakos whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw these rejections.

Amendments were made to the claims in order to more clearly describe features of the present invention. Particularly, amendments were made to the claims to more clearly recite that the present invention is directed to a computer system which implements a file system for managing files, a program for executing a file access process according to a file access request and a file access method.

The computer system according to the present invention includes a first computer that receives access request to files from at least one client computer, a first storage device which is connected to the first computer and stores file management information, a second computer that receives access requests to file data from the first computer, a second storage system that is connected to the second computer and stores file data and a network that connects the at least one client computer, and the first and second computers to each other.

According to the present invention upon receiving file data from the at least one client computer, the first computer assigns first identification

information to the file data and stores the file data in the second storage device system through the second computer and the first storage device system stores the first identification information assigned to the file data by the first computer and a file name of a file having the file data designated by the at least one client computer as file management information.

Further, according to the present invention upon receiving, from the at least one client computer, a write request requesting write access to a file which is the target of the write request, the first computer searches an open file table, which registers in corresponding relation file names used by the at least one client computer to designate files and first identification information of files that are open, to obtain first identification information of the file and assigns to write data received from the at least one client computer, with the write request, second identification information different from the identification information assigned to the file data of the file stored in the second storage device system.

Still further, according to the present invention the first computer stores the write data, through the second computer, in a storage region within the second storage device system that is different from a storage region that stores the file data already stored in the second storage device system and the first computer correlates the second identification information to a file name of the file and to the first identification information and stores the second identification information in the first storage device system.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each

other. Particularly, the above described features of the present invention are not taught or suggested by Cannon, Schneider, Larson or Nakos whether taken individually or in combination with each other as suggested by the Examiner.

Cannon teaches a method for generating file copies with minimum mounting and positioning of storage volumes. Particularly, Cannon teaches a method which receives a copy generation request specifying selection criteria for files to be included in a copy set, identifies matching files meeting the selection criteria, locates the matching files on their storage volumes and copies the files to the copy set, ignoring the file order in the request but considering the proximity of the matching files to each other on the storage volumes. Cannon also teaches that a storage manager is provided for maintaining reference information about the client files copied within the attached storage volumes. In Cannon a server uses a database to keep inventory information about the original client files and storage volume location information about the copies of the client files stored within the server. As per Cannon, the inventory information includes a client system identifier, a client system directory, a client file name and other attributes of the file including location information.

The main objective of the system taught by Cannon is to provide a method and apparatus for generating a copy set in such a manner so as to minimize mounting and positioning of the storage volumes.

The present invention differs entirely from that taught by Cannon. Particularly, the present invention is directed to provide a method, apparatus and computer program which manages files stored in storage systems such

that different identification information is assigned to each file data of a file stored in the storage systems based on request from client computers in a way such that the identification information and file names designated by the client computers are managed in correlation with each other. Further, the present invention provides for the use of a open file table which manages relations between file name, views and the actual files and their locations to allow for the files to be freely manipulated by a client computer with the client computer having to track and manage the files their data (file data), file names and their locations. Such ease of managing files and file data is not the object of Cannon nor is it taught or suggested.

The above described features of the present invention are implemented in a system such as that illustrated in Fig. 2, wherein a first computer 1200 includes information such as an open file table 1260 which registers in corresponding relations file names used by the client computer to designate files and first identification information of files that are open as illustrated, for example, in Fig. 5 and an attribute table 1240 and location table 1250 which store information regarding the attributes of files including first and second identification information and location information of the files.

According to the present invention as now more clearly recited in the claims the first computer upon receiving from the client computer, a write request, searches the open file table to obtain first identification information of the file which is the target of the write request. These features of the present invention correspond, for example, to step 2600 as illustrated in Fig. 8 of the present application.

At no point is there any teaching or suggestion in Cannon of any of the above described features of the present invention as now more clearly recited in the claims.

Thus, Cannon fails to teach or suggest a first computer that receives access request to files from a client computer, a first storage device system connected to the first computer that stores file management information, a second computer that receives access request from the first computer and a second storage device system that is connected to the second computer and stores file data as recited in the claims.

Further, Cannon fails to teach or suggest that upon receiving file data from the client computer, the first computer assigns first identification information to the file data and stores the file data in the second storage device system connected to the second computer and the first storage device system stores the first identification information assigned to the file data by the first computer and a file name of a file having the file data designated by the client computer as the file management information as recited in the claims.

Still further, Cannon fails to teach or suggest that upon receiving, from the client computer, a write request requesting access to a file which is the target of the write request, the first computer searches an open file table, which registers in corresponding relations file names used by the client computer to designate files and first identification information of files that are open, to obtain first identification information of the file which is the target of the write request and assigns to the write data received from the client computer with the write request second identification information different

from the first identification information assigned to the file data of the file stored in the second storage device system as recited in the claims.

Still further yet, Cannon fails to teach or suggest that the first computer stores the write data through the second computer, in a storage region within the second storage device system that is different from a storage region that stores the file data already stored in the second storage system and that the first computer correlates the second identification information to a file name of the file and to the first identification information stores the second identification information in the first storage device system as recited in the claims.

Therefore, Cannon fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §102(e) rejection of claims 1-4, 10-13, 19 and 21 as being anticipated by Cannon is respectfully requested.

The above described deficiencies of Cannon are not supplied by any of the other references of record. Particularly, the above described deficiencies of Cannon are not supplied by Schneider, Larson or Nakos. Therefore, combining the teachings of Cannon with one or more of Schneider, Larson and Nakos still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Schneider is merely relied upon by the Examiner for an alleged teaching of a storage device which stores view data correlated with time information and view data including a pair of a file name of a file corresponding to file data and identification information of the file stored in the storage device system at a time indicated by the time information correlated

with the view data. Larson is merely relied upon by the Examiner for an alleged teaching of different methods to determine if a user's access authorization to a remote system has expired. Nakos is merely relied upon by the Examiner for an alleged teaching that web database software is a software module that translates web request into data request.

However, as is clear from each of the above, there is no teaching or suggestion in either of Schneider, Larson or Nakos of the features shown above not to be taught or suggested by Cannon. Particularly, at no point is there any teaching or suggestion in either of Schneider, Larson or Nakos, of, for example, providing an open file table and the information contained therein as in the present invention as recited in the claims. Further, there is no teaching or suggestion in either of Schneider, Larson or Nakos that the first computer uses the information of the open file table to obtain first identification information of the file to which the write request is to be directed as in the present invention as recited in the claims. Still further, there is no teaching or suggestion in either of Schneider, Larson or Nakos that the first computer generates second identification information related to the first identification information for designating the file data in the second storage device system and sets information regarding the relations between the first and second identification information in the first storage device system as in the present invention as recited in the claims.

Thus, Schneider, Larson and Nakos whether taken individually or in combination with each other or in combination with Cannon fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Therefore, since Schneider, Larson and Nakos are each deficient

of the features of the present invention as now more clearly recited in the claims the same as Cannon, combining one or more of these references with Cannon still fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 5-8 and 14-17 as being unpatentable over Cannon view of Schneider, the 35 USC §103(a) rejection of claim 9 as being unpatentable over Cannon in view of Larson and the 35 USC §103(a) rejection of claim 20 as being unpatentable over Cannon in view of Nakos are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-22.

In view of the foregoing amendments and remarks, applicants submit that claims 1-21 are in condition for allowance. Accordingly, early allowance of claims 1-21 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (H-1212).

Respectfully submitted,

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